

[54] **MOVABLE MAGNETIC DOMAIN RANDOM ACCESS THREE-DIMENSIONAL MEMORY ARRAY**

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[58] **Field of Search**... **340/174 TF, 174 SR, 174 AC, 340/174 NC**

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[57] **ABSTRACT**

There is disclosed a random access memory device wherein binary bits of information are stored by moving mobile cylindrical magnetic domains in anisotropic ferromagnetic crystal platelets between positions predetermined in the platelets by appropriate drive circuitry conductor configurations which generate suitable magnetic fields for positioning and moving the cylindrical magnetic domains. The device contemplates a three input or three ordinate address memory which may take the form of a three dimensional stack of crystal platelets sandwiched between substrates on which the appropriate conductor patterns are deposited. Provision is made for an enable or inhibit function as well as for a magnetoresistive sensing conductor for each crystal while yet keeping the necessary conductor configurations at a level of simplicity such that no insulated crossovers are necessary on any single array. The two arrays of each single crystal platelet provide for both read and write functions in that single platelet.

5 Claims, 12 Drawing Figures

[56] **References Cited**

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